

DEPARTMENT of ENVIRONMENTAL SERVICES
Water Supply & Pollution Control Division - Biology Bureau

LAKE TROPHIC DATA

MORPHOMETRIC:

Lake: CONSTANCE LAKE	Lake Area (ha):	3.64
Town: PIERMONT	Maximum depth (m):	5.5
County: Grafton	Mean depth (m):	2.4
River Basin: Connecticut	Volume (m ³):	88000
Latitude: 44°00' N	Relative depth:	2.6
Longitude: 71°59' W	Shore configuration:	---
Elevation (ft): 1540	Areal water load (m/yr):	5.31
Shore length (m): ---	Flushing rate (yr ⁻¹):	2.20
Watershed area (ha): 38.3	P retention coeff.:	0.65
% watershed ponded: 0.0	Lake type:	natural

BIOLOGICAL:

	9 February 1987	21 August 1986
DOM. PHYTOPLANKTON (% TOTAL) #1	SPARSE	DINOBRYON 45%
#2		ASTERIONELLA 20%
#3		
PHYTOPLANKTON ABUNDANCE (cells/mL)		605.0
CHLOROPHYLL-A (µg/L)		4.42
DOM. ZOOPLANKTON (% TOTAL) #1	CALANOID COPEPOD 60%	KERATELLA 55%
#2	ROTIFER SPP 14%	CALANOID COPEPODS 20%
#3	KERATELLA/CILIATE SPP	10%
ROTIFERS/LITER	26	78
MICROCRUSTACEA/LITER	68	52
ZOOPLANKTON ABUNDANCE (#/L)	105	131
VASCULAR PLANT ABUNDANCE		Sparse
SECCHI DISK TRANSPARENCY (m)		4.6
BOTTOM DISSOLVED OXYGEN (mg/L)	4.2	0.2
BACTERIA (fecal col., #/100 ml) #1		< 10
#2		
#3		

SUMMER THERMAL STRATIFICATION:

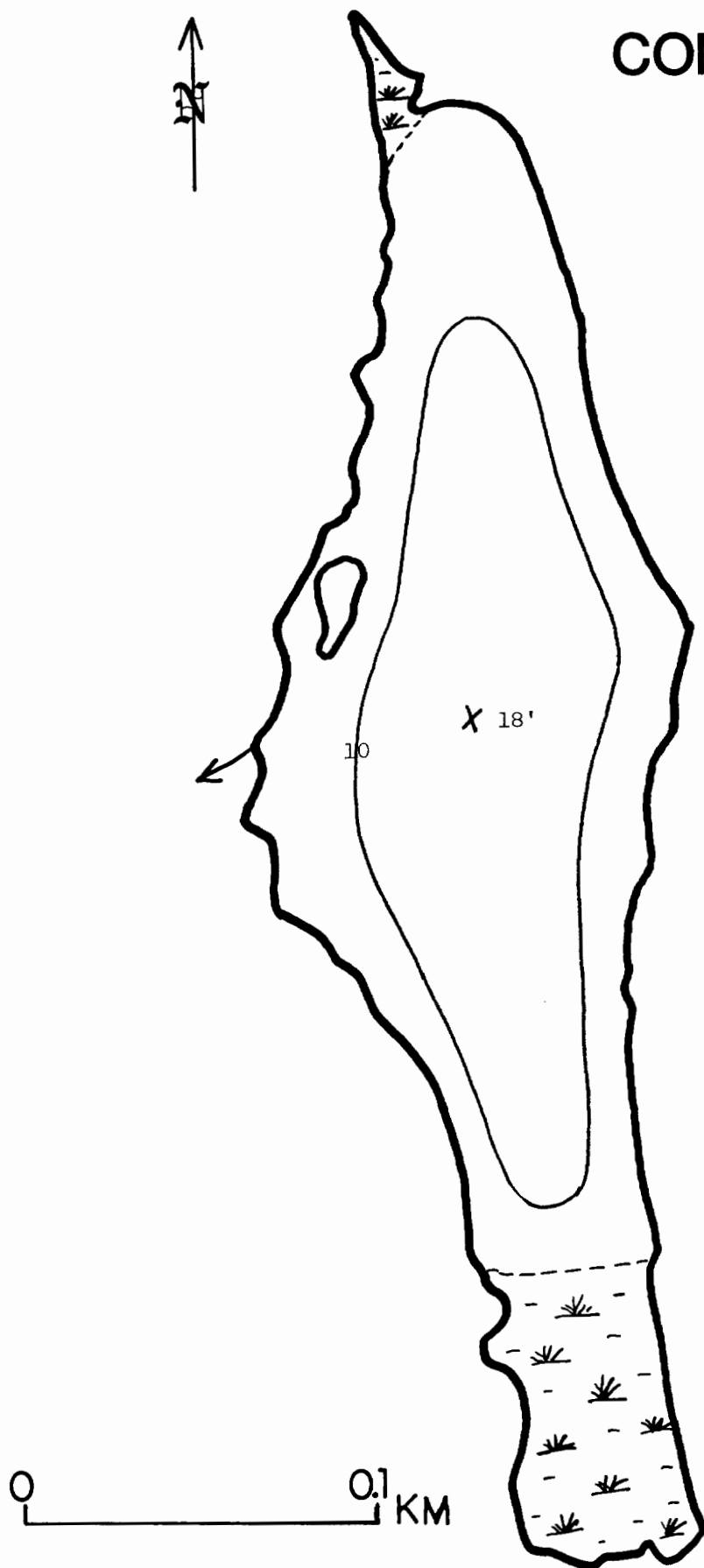
weakly stratified

Depth of thermocline (m): 4.6
Hypolimnion volume (m³): None

<u>CHEMICAL:</u>		Lake: CONSTANCE LAKE Town: PIERMONT			
		9 February 1987		21 August 1986	
DEPTH (m)		2.0	4.0	1.8	3.6
pH (units)		4.9	5.0	4.9	4.9
A.N.C. (Alkalinity)		-0.1	0.0	-0.2	-0.4
NITRATE & NITRITE NITROGEN	< 0.05	< 0.05	< 0.05		< 0.05
TOTAL KJELDAHL NITROGEN	0.58	0.70	0.30		0.28
TOTAL PHOSPHORUS	0.012	0.012	0.015		0.013
CONDUCTIVITY (μ mhos/cm)	22.7	22.8	20.3		20.9
APPARENT COLOR (cpu)	22	29	20		20
MAGNESIUM			0.21		
CALCIUM			1.1		
SODIUM			0.8		
POTASSIUM			0.20		
CHLORIDE	< 2	< 2	2		< 2
SULFATE	6	6			
TN : TP	48	58	20		22
CALCITE SATURATION INDEX					
All results in mg/L unless indicated otherwise					
<u>TROPHIC CLASSIFICATION: 1986</u>					
	D.O.	S.D.	PLANT	CHL	TOTAL CLASS
	5	1	0	0	6 Meso.
<u>COMMENTS:</u>					
<ol style="list-style-type: none"> 1. This is an acid-rain impacted remote pond. Access was via a 1 mile hiking trail. 2. Water quality was typical of an acid rain impacted pond: low pH, negative alkalinity, low conductivity, and shoreline filamentous algae. The water was 5 times more acidic than in 1952. 3. Whole water phytoplankton was 70% greens and 25% golden algae. Tiny green flagellates were dominant. 					

CONSTANCE LAKE

PIERMONT



Rough Bathymetric Chart
Fish & Game - 1952
12 soundings

10 foot isobaths

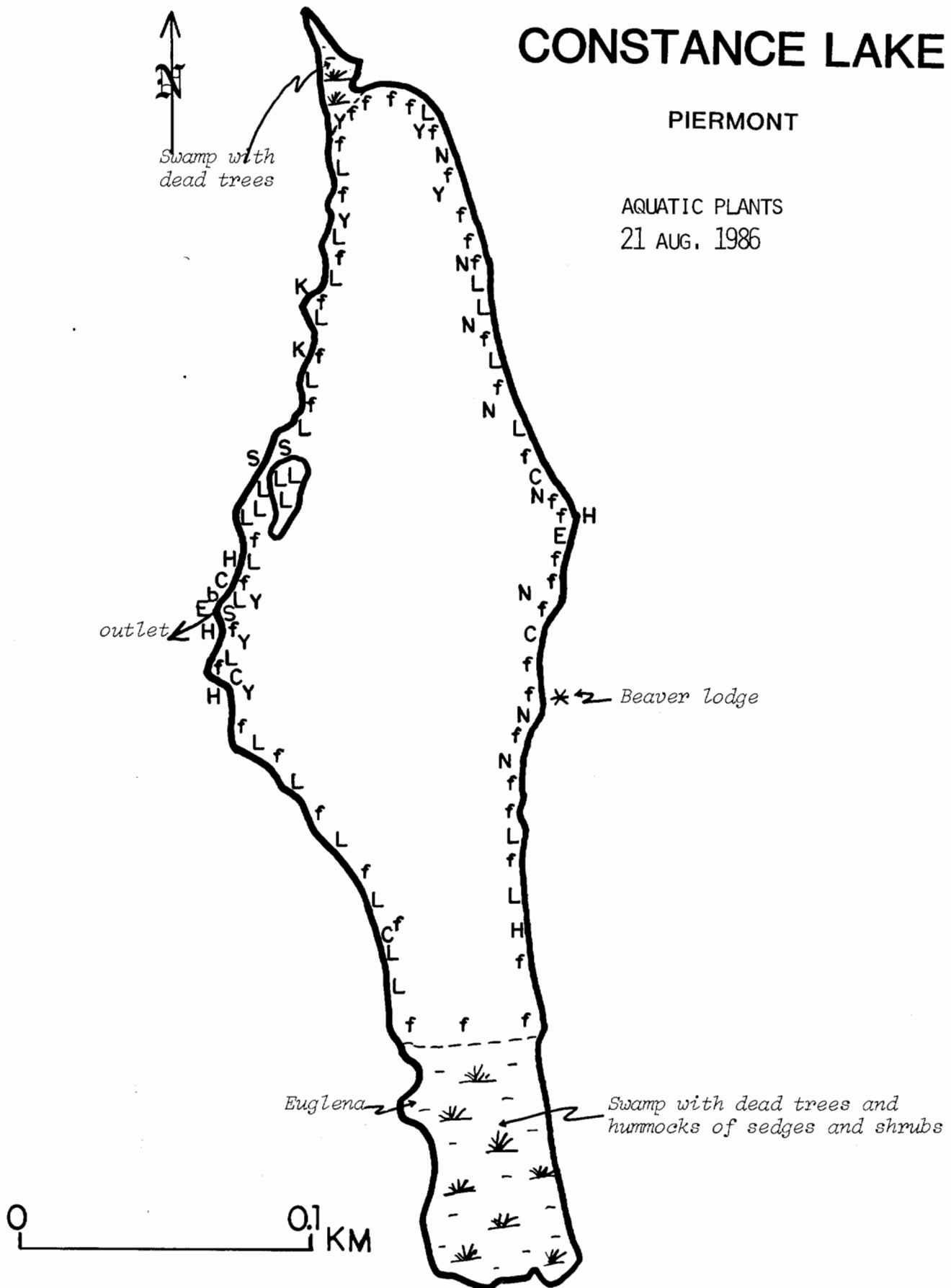
[illegible]

CONSTANCE LAKE

PIERMONT

AQUATIC PLANTS

21 AUG. 1986



AQUATIC PLANT SURVEY

LAKE: CONSTANCE LAKE

TOWN: PIERMONT

DATE: 08/21/86

[illegible]

OVERALL ABUNDANCE: Sparse

GENERAL OBSERVATIONS:

1. True vascular aquatic plants were relatively sparse. Leatherleaf was abundant around most of the shoreline, and was often in the water. Huckleberry and St. John's-wort were also common along the shore, but infrequently in the water.
2. Filamentous green algae, mostly Mougeotia, were abundant around the entire shoreline.
3. Beaver lodge and beaver activity were observed; many frogs were present.
4. Surface green scum was observed in the southern swamp end - proved to be Euglena.